7/27/88

217423 (4 record actions)
RECORD NO.

SHAUGHNESSEY NO. REVIEW NO.

EEB REVIEW

DATE: IN 3-21-88 OUT 7-27-88

FILE OR REG. NO 239-1633 (4 actions)

PETITION OR EXP. NO.

DATE OF SUBMISSION

DATE RECEIVED BY HED 3-17-88

RD REQUESTED COMPLETION DATE 5-16-88

EEB ESTIMATED COMPLETION DATE 5-16-88

RD ACTION CODE/TYPE OF REVIEW 660

TYPE PRODUCT(S) : I, D, H, F, N, R, S Insecticide

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. W. Miller (16)

PRODUCT NAME(S) Dibrom 8E

COMPANY NAME Chevron

SUBMISSION PURPOSE submission of aquatic toxicity data

| SHAUGHNESSEY NO. | CHEMICAL, & FORMULATION | % A.I. |
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Naled Registration Standard; Aquatic Organism Toxicity Studies; EPA Accession Numbers 263578,-79,-80, and -81

TO: Dan Peacock, PM 16
Insecticide-Rodenticide Branch
Registration Division TS-767C

FROM: for Jim Ackerman, Branch Chief
Ecological Effects Branch
Hazard Evaluation Division TS-769C

7/27/88

EEB has reviewed the above referenced studies, submitted by Chevron Chemical Company to support the data requirements of the Naled Registration Standard. The studies consist of technical testing on estuarine organisms and formulation testing freshwater organisms. The review results are summarized below.

I. Technical Studies

| Guideline Ref. No. | Test Species | %a.i. | Test Type | Reported Results | Toxicity Category | Fulfills Requirement |
|---|---|---|---|---|---|---|
| 72-3 | Grass Shrimp | 90 | 96-hr $LC_{50}$ | 27 ug/l | Very Highly Toxic | No |
| 72-3 | Sheeps-head minnow | 90 | 96-hr $LC_{50}$ | 1.2 mg/l | Moderately Toxic | Yes |
| 72-3 | Eastern Oyster | 90 | 48-hr $EC_{50}$ shell deposition | 0.19 mg/l | Highly Toxic | Yes |

II. Formulation Studies

A. Ortho Dirom 8 Elusive

| Guideline Ref. No. | Test Species | %a.i. | Test Type | Reported Results | Toxicity Category | Fulfills Requirement |
|---|---|---|---|---|---|---|
| 72-1 | Rainbow trout | 58 | 96-hr $LC_{50}$ | 0.13 mg/l | Highly Toxic | No |
| 72-1 | Bluegill Sunfish | 58 | 96-hr $LC_{50}$ | 0.24 mg/l | Highly Toxic | No |
| 72-2 | Daphnia magna | 58 | 48-hr $LC_{50}$ | 1.5 ug/l | Very Highly Toxic | No |

B. Ortho Fly Killer D

| Guideline Ref. No. | Test Species | %a.i. | Test Type | Reported Results | Toxicity Category | Fulfills Requirement |
|---|---|---|---|---|---|---|
| 72-1 | Rainbow trout | 36 | 96-hr $LC_{50}$ | 0.34 mg/l | Highly Toxic | No |
| 72-1 | Bluegill Sunfish | 36 | 96-hr $LC_{50}$ | 1.2 mg/l | Moderately Toxic | No |
| 72-2 | Daphnia magna | 36 | 48-hr $LC_{50}$ | 0.002 mg/l | Very Higly Toxic | No |

C. Ortho Dibrom LVC 10

| Guideline Ref. No. | Test Species | %a.i. | Test Type | Reported Results | Toxicity Category | Fulfills Requirement |
|---|---|---|---|---|---|---|
| 72-1 | Rainbow trout | 15 | 96-hr $LC_{50}$ | 0.21 mg/l | Highly Toxic | Yes |
| 72-1 | Bluegill Sunfish | 15 | 96-hr $LC_{50}$ | 0.6 mg/l | Higly Toxic | Yes |
| 72-2 | Daphnia magna | 15 | 48-hr $LC_{50}$ | 2.9 ug/l | Very Highly Toxic | No |

The registrant is advised to consult the data evaluation records for those individual studies found to be inadequate for guideline fulfillment. The study records will advise on the repairability of each study requiring additional data or repeated testing.

Based upon the reported results and toxicity characteristics established by these aquatic organisms' studies and the use patterns' hazard assessments previously conducted by EEB for the Naled Registation Standard, previously reserved higher tiered studies are justified. A fish early life stage study and an aquatic invertebrate life cycle study will be required. Freshwater and estuarine species testing will be required for each study type. The justifications for the studies are based upon the results of the acute toxicity studies and mosquito control uses of naled which involve applications to swamps, marshes, or other aquatic environments targeted by public mosquito control programs.

As indicated by the EEB Science Chapter for the Naled Registration Standard, the mosquito control fogging applications could produce EECs that would pose risk to aquatic organisms. It was determined that the present environmental fate database was insufficient for complete hazard assessment purposes and the determination of aquatic EECs from fogging applications. If the application rate of 0.25 lb/A were to completely enter the water, it would produce an aquatic EEC of 184 ppb (0.5 ft. depth) which would exceed the $LC_{50}$ of 160 ppb for salmonids. Even if 0.02% of the 0.25 lb/A application rate were to enter the water, the EEC would reach the $LC_{50}$ of 0.3 ppb for aquatic invertebrates (i.e., Daphnia).

Field studies will continue to be reserved pending the review results of environmental fate studies, in addition to the required studies specified above.

If there are any additional questions concerning this action, please contact John Noles at 557-1945.